"The doses given varied from thirty to seventy-five grains (two to five grammes). Thirty grains produced no sensible effect.

"In two cases where forty-five grains had been given, the pulse fell in half an hour from 80 to 70 in one case, from 96 to 84 in the other, drowsiness in either case coming on in a quarter of an hour, followed by natural sleep, which began forty-five minutes after taking the drug. Sleep continued in the first case for two and a half hours without waking, and an hour and a half at intervals afterwards.

"In the other case, with the same amount, sleep only lasted one and a quarter hours.

"In two more cases sixty grains were given, the pulse falling in one from 120 to 90, in the other from 90 to 60 in about half an hour, with increasing drowsiness. In the first case the patient did not go to sleep for two hours, and then only slept one and one-fourth hours. Whereas, the other fell asleep in an hour, sleeping heavily two hours, and at intervals for from two to three hours more.

"In another case seventy-five grains were given, the pulse falling from 125 to 100 in half an hour, sleep then coming on and continuing for four hours. It was, however, somewhat interrupted, and the patient was roused and made to answer questions without much difficulty.

"In no instance did sleep come on in less than half an hour after taking the drug. Two or three of the patients complained, on waking, of headache, lasting from one to three or four hours; but otherwise they seemed to experience no ill effects. Appetites good.

"The results obtained with this American preparation will be seen not to harmonize with those of Liebreich, who claims a much greater hypnotic power, having with from one and a half to three and a half grammes (twenty-five to thirty grains) produced sleep which lasted from five to fifteen hours. He also considers chloral an anæsthetic of some power, though inferior to chloroform and ether. Demarquay, on the other hand, in a recent report to the French Academy of Sciences, states, as the result of a series of experiments on animals and men, that he considers chloral as no anæsthetic at all, as the skin is sensitive, no matter how great the intensity of the sleep. He finds it, however, the most rapid of hypnotics."

Dr. D. subsequently gave chloral with more positive results: "One patient, who had been suffering great pain from an ulcer of the cornea, was given gr. lx. early in the evening. The pain was relieved in the course of half an hour, but the patient became somewhat delirious, and, being missed from the ward, was found wandering about alone in the upper stories of the building. On being brought back to his bed he at once went to sleep, passed the night quietly, and continued in a drowsy state all the next day. *He exhibited marked cutaneous anæsthesia*, as did also a female patient who took the same dose. Forty-five grains were given in a case of iritis, attended with severe pain, at 1 A. M. The patient, a woman of 60, went at once to sleep, and awoke the next morning free from pain, but complaining of headache."—*Boston Med. and Surg. Journ.*, Dec. 2, 1869.

Physiological Action of Bromide of Potassium and Ammonium.—Dr. Robert Amory in a paper read before the Massachusetts Medical Society, from experiments performed on man and the lower animals, deduces the following conclusions:—

I. Bromide of potassium is easily absorbed by the mucous membrane wherever they are placed in contact.

II. This drug is *easily* absorbed by the skin, provided the water in which it is dissolved is below the temperature of 75° F. If the temperature is above 96° F., it is not absorbed.

III. The elimination is conducted by the skin and kidneys; as the saliva is a secretion, its presence in this fluid is not a proof of its elimination.

IV. In therapeutical doses bromide of potassium is not eliminated by the intestines or lungs.

V. Bromide of potassium passes out of the system without decomposition.

As most of the chemical transformation of drugs takes place, according to Bernard, in the laboratory of the kidneys, Dr. Bills' theory in regard to the interchange between chlorine and bromine in the blood, probably, is erroneous. If there is an interchange, it is in the kidneys, or outside of the body (in other words), that the transformation must occur.

VI. The effects of the drug are produced by its direct action upon the bloodvessels or the vaso-motor system which control the contraction of these vessels, which explanation may account for all the physiological or therapeutical conditions brought about by the exhibition of this drug.

VII. There is probably no different or opposing action in proportion to the dose administered, which cannot be said of all drugs. The larger the dose the more intense and the longer the action upon the vaso-motor system.

VIII. Its action upon the general nervous system is secondary, and dependent upon that of the vaso-motor nerves. That it affects certain parts where there may be a determination of blood is not contrary to the known laws of physiology. Lack of healthy resistance to disturbing influences allows the bloodvessels to be dilated, and consequently discharged. The presence of this drug stirs up the opposing influence which contracts these vessels. This influence would be exerted upon the diseased portion of the system more powerfully than upon the healthy portion.

IX. Bromide of ammonium in *almost* every respect has the same action as bromide of potassium.

Barton's Operation for Bony Anchylosis of Knee-Joint.—By GEORGE C. BLACKMAN, M. D., Prof. of Surg. During a recent professional visit to Eaton, O., my friend Dr. A. H. Stevens, had the kindness to show me a young gentleman on whom I performed the above operation in April, 1861. The result has been most gratifying. The leg is very slightly flexed, and the patient walks with a gait nearly natural. In looking over the records of the old St. John's Hospital, I find a report of the case carefully drawn up by Dr. Thomas Macmillan, a well-known surgeon of the regular army, and who, at that time, was one of the resident physicians of the institution. We copy the more important details of this report:—

"Benjamin F. Stark, æt. 20, farmer, admitted April 1st, 1861. Eleven years ago cut his right knee with an axe, making a wound seven inches long and a quarter of an inch in depth, on the inner side of the knee. This was followed by great inflammation, and when it subsided the joint was stiff and the limb straight. Some months afterwards the leg began gradually to become flexed, and finally became immovably fixed at a point which left the heel about eight inches from the floor, or nearly at a right angle. On the 2d of April, the patient being fully under the influence of chloroform, Prof. B. attempted with great force, but unsuccessfully, to break up the adhesions. In this he was assisted by Drs. Tripler and Foster. On the 5th of April, assisted by the same gentlemen, Prof. B. proceeded to perform Barton's operation of exsecting a wedge-shaped piece of bone. A semilunar incision was made over the front part of the thigh, commencing about two and one-half or three inches above the condyles. The soft parts were then detached and reflected so as to expose the bone. The saw was now applied so as to remove a wedge-shaped piece of the femur, measuring on its anterior surface about one and three-quarters of an inch in extent. At the apex of the wedge, on the posterior surface the bone was not completely divided, a few lines in thickness having been left. The patella being very prominent, the greater portion was removed. The hemorrhage was very trifling, no vessel requiring a ligature. The flap having been replaced and secured with stitches, the limb was placed in a McIntyre's splint, the angle of which being that of the limb before the operation. The patient rallied well from the operation, and the following night was passed comfortably under the influence of a quarter of grain of sulph. morphia. The next morning he suffered considerable pain, and there was some oozing of blood from the corners of the wound, which was checked by the application of cold. From the 6th to the 13th of April he suffered at times some pain in the limb, which, however, was soon relieved by small doses of morphia and mild cathartics. On